April 16, 1963 F. J. MEYERS 3,086,102

HINGED OVEN HEATING ELEMENT

Filed Jan. 4, 1961

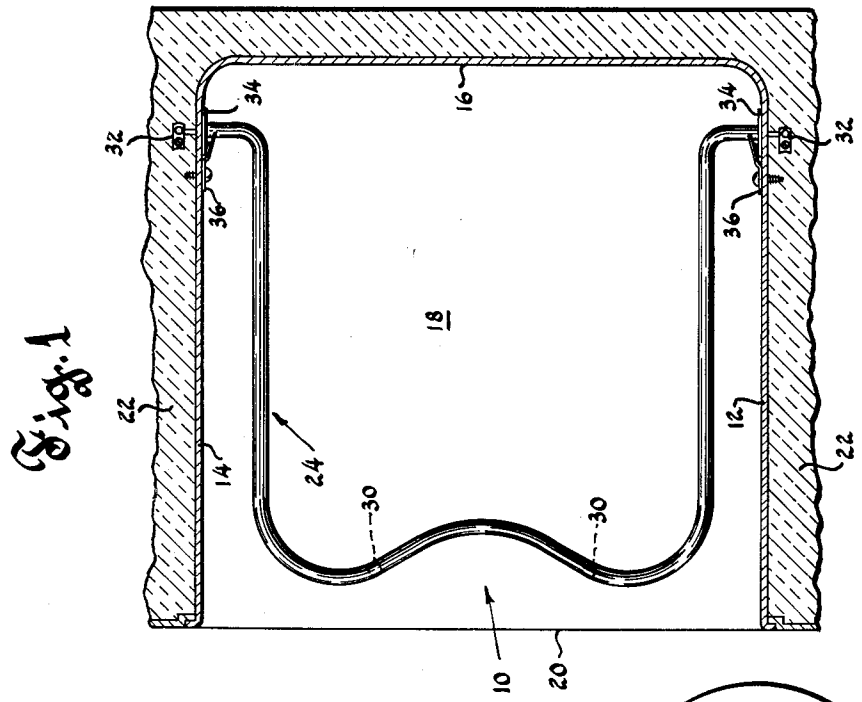


Fig. 1

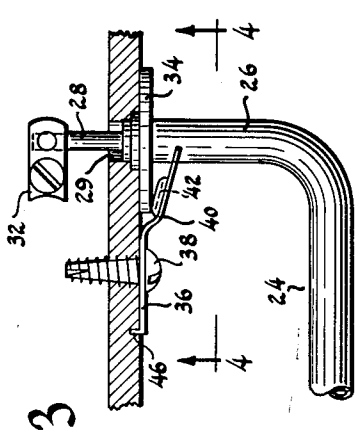


Fig. 3

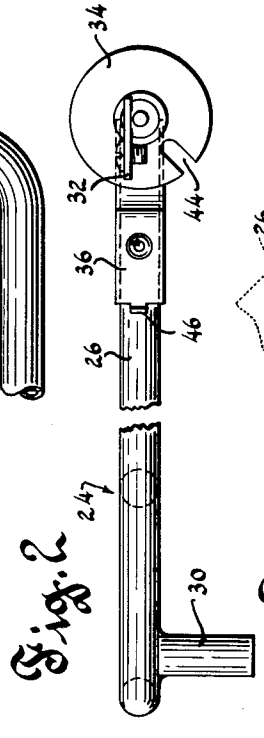


Fig. 2

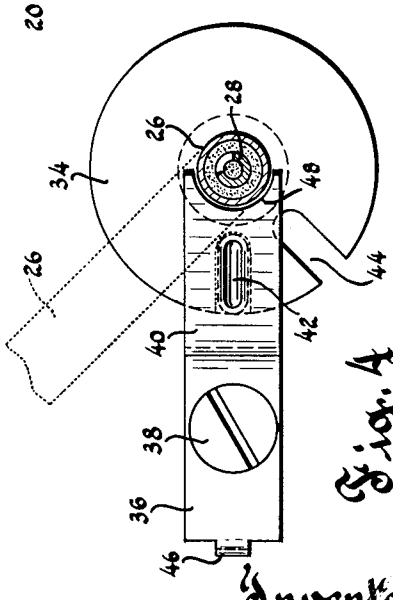


Fig. 4

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HINGED OVEN HEATING ELEMENT

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This invention relates to an electrical heating apparatus for a range oven and more particularly to an improved mounting arrangement for pivotally supporting a tubular sheath heating element therein.

The primary object of this invention is to provide an improved mounting arrangement of this type which is simple, economical and easily installed.

Another object is to provide an arrangement wherein a permanent electrical ground for the element is provided without the necessity of a separate ground wire or connection.

Stated briefly, the electrical heating apparatus of this invention includes a heater assembly pivotally mounted in the side walls of the oven liner. The ends of the heater element extend through openings in the side walls and have washers fixedly mounted thereon and adapted for flush engagement with the inside of the side walls. A pair of spring clips are fastened to the walls adjacent the washers which have spring arm portions which lie in frictional engagement with the washers. The spring clips and washers are provided with registering detent portions adapted to retain the heater assembly in a raised position to permit cleaning of the oven. The spring clip members not only securely retain the ends of the heater in the side walls but further provide a permanent electrical ground and thereby eliminate the necessity of a separate ground wire or connection.

Other objects and advantages will be pointed out in, or be apparent from the specification and claims, as will obvious modifications of the single embodiment shown in the drawings, in which:

FIGURE 1 is a fragmentary plan view, partially in section, of an electric range oven provided with a heating element and mounting arrangement constructed in accordance with the present invention;

FIG. 2 is a side elevation view of the element and mounting apparatus therefor shown in FIG. 1 prior to installation in an oven but having terminal clips mounted thereon;

FIG. 3 is an enlarged fragmentary plan view of one end of the element and mounting apparatus shown in FIG. 1; and

FIG. 4 is a sectional view taken along line 4—4 of FIG. 3.

Referring to the drawings, the numeral **10** designates an oven compartment defined by side walls **12** and **14**, rear wall **16**, bottom wall **18** and a top wall (not shown). Compartment **10** has a front opening **20** with walls **12**, **14**, **16**, **18** and the top wall forming an oven liner which is preferably surrounded by insulating material **22** supported in a range body (not shown).

Oven compartment **10** is heated by a heater assembly **24** of substantially U-shaped configuration. Assembly **24** may be of any suitable internal construction and includes a tubular metal sheath **26** having a resistor element **28** mounted therein (FIG. 4).

U-shaped assembly **24** is horizontally disposed in compartment **10** with its ends bent at right angles to each leg for mounting in openings **29** in side walls **12** and **14** of the oven liner as shown in FIGS. 1 and 3. The assembly **24** is supported parallel to bottom **18** by a pair of spacer supports **30**, **30** welded or otherwise fastened to sheath

26 as shown in FIG. 2. The resistor element **28** of assembly **24** is electrically connected to a source of electricity by means of connector terminals **32** welded or otherwise fastened to the ends of element **28** which extend through side walls **12** and **14**.

Assembly **24** is mounted in side walls **12** and **14** for pivotal movement about a horizontal axis between a horizontal operating position and a raised position (to facilitate cleaning the oven compartment **10**) by means of a washer **34** and cooperating spring catch member **36** mounted at each end of the assembly as shown in detail in FIGS. 3 and 4. Washers **34** are fixedly mounted on sheath **26** by any suitable means such as by extruding an opening in the washer, inserting the sheath therethrough and then pressing the extruded washer material flat against the washer to clinch the washer to the sheath. The washers and sheath are frictionally engaged and retained in place by spring catch members **36**. Each catch member **36** is fastened to the oven side wall by a screw **38** and has an offset spring arm portion **40** in frictional engagement with the face of a washer **34**. An upset portion **42** on each spring arm **40** is provided for engagement with a radial notch or detent **44** in washer **34**, as clearly shown in FIG. 4, to hold heater assembly **24** in raised position when it is desired to clean the oven.

Each spring catch member **36** is provided with a lug **46** at one end adapted for engagement with a small opening or detent in the side wall to prevent the catch member from rotating on screw **38**. The other end of the catch member is notched as at **48** to fit snugly around sheath **26** to further anchor the catch member in proper position.

It will be apparent from the foregoing that the above described arrangement provides a very economical method of mounting a heater assembly in an oven. It is only necessary to provide three pierced holes in sides **12** and **14** of the oven liner. The ends of element **24** are then readily snapped into place in the proper openings to hold the element in place while spring clips **36** are installed. The spring arms **40** of the clips serve as sliding electrical contacts with washers **34** to thus provide a permanent electrical ground of metal sheath **26** to the oven liner and thereby obviate the necessity of a separate ground wire or connection.

Although but one embodiment of the present invention has been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

I claim:

1. Electric heating apparatus for a range oven having an oven compartment enclosed by an oven liner comprising, a heater assembly including a tubular metal sheath having a resistor element mounted therein, openings in the side walls of the oven liner adapted to receive the ends of said sheath to permit pivotal up and down movement of said heater assembly in the oven compartment, a pair of washer members fixedly mounted on said sheath and adapted for engagement with the inside of the side walls, a pair of spring clip members fastened to the side walls adjacent said washers, said spring clip members having spring arm portions in frictional engagement with washers, said spring arms having upset portions therein adapted for engagement with detents formed in said washers to retain said heater assembly in raised position.

2. Electric heating apparatus according to claim 1 in which said spring clip members have lugs thereon adapted for engagement with detents in the side walls of the oven liner.

3. Electric heating apparatus according to claim 1 in which the ends of said spring arms are notched to snugly engage said sheath.

4. Electric heating apparatus according to claim 1 in which said heater assembly is of substantially U-shaped configuration having its ends bent at substantially right angles to the legs of the U-shaped assembly for mounting in the side walls of the oven liner.

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